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NEW ASILIDAE FROM THE SOUTHWESTERN UNITED STATES (DIPTERA)

By A. Earl Pritchard[1]

One new genus and fourteen new species of Asilidae, from Arizona, New Mexico, and Oklahoma, as well as keys to several genera, are given in this paper. I am indebted to Dr. C. H. Curran for checking most of this new material. The types of the new species are deposited in The American Museum of Natural History.

OMNINABLAUTUS, NEW GENUS

Form and structure as in *Ablautus* Loew, and separated from the other Nearctic genera of Dasypogoninae lacking pulvilli, *Hodophylax* James and *Parataracticus* Cole, by *Ablautus* characters. Differs from *Ablautus* by possessing a terminal clawlike spur on the fore tibia, and in view of this spur somewhat allied to *Hodophylax*. The relationship of *Omninablautus* to *Ablautus* is parallel to that of *Comantella* Curran and *Eucyrtopogon* Curran.

Head nearly twice as broad as high. Face and front moderately wide, their sides subparallel, slightly and broadly convergent below level of antennae. Mystax dense, reaching nearly to the antennae and concealing the flattened face. Antennae short and slender; basal two segments short, subequal, bearing long bristles below; third segment one and one-half times as long as the first two combined; style short with a tiny apical spine. Ocellar tubercle large and bristly. Thorax quite bristly; hind margin of scutellum with several pairs of bristles. Abdomen rather narrow, convex dorsally, gently tapering; segment one very short, segment three with a transverse furrow near base. Male genitalia small; ovipositor with a terminal circlet of spines. Legs bristly; terminal spur of front tibia long and crooked; claws long and slender; pulvilli absent. Wings with posterior cells widely open, the anal cell closed at the margin.

Genotype.—*Omninablautus arenosus*, new species.

Omninablautus arenosus, new species

Black in ground color, the abdomen, except base, and legs for the most part reddish; pollen and vestiture white or yellowish. Length, 5 to 8 mm.

Male.—Head densely white pollinose, yellowish above occipital foramen. Antennae black with basal segments reddish inside; thinly covered with pollen. Rear of head with a row of white occipito-orbital bristles, the lower sides of the occiput pilose.

Thorax thickly cinerous pollinose; pronotum, mesonotum behind the transverse

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suture, and scutellum yellowish pollinose; bisected by a row of white hairs and bordered on either side by a row of long yellowish bristles. Scutellum with two to four pairs of bristles on the hind margin.

Coxae colored like the thorax, legs otherwise yellowish; trochanters and tarsi brownish; apices of the tibiae dark brown. Legs covered with white bristles and large appressed hairs; claws, terminal spur on front tibiae, and apical spine on middle tibiae, black.

Wings hyaline, veins yellow basally.

Abdominal segments 1–3, except front border of 2 and a pair of large basal spots on 4, black, otherwise reddish; 2–6 completely covered with silky white pollen; 7, 8, and appendages shining. Sides of abdomen bearing stout setae, 2 and 3 with lateral bristles. A double transverse row of small black spots in the furrow across base of 3; an indentation usually present across beveled base of 2.

FEMALE.—Similar to the male, usually larger. Posterior margin of abdominal segment 3 usually red in ground color, basal black spots on 4 reduced and widely separated, or absent. A pair of basal, non-pollinose semicircular spots present on 4 and 5, less widely separated on the latter segment; 6–8 shining except lateral pollinose margins of 6; spines of ovipositor black.

TYPES.—Holotype, male, Artesia, New Mexico, August 30, 1934 (A. E. Pritchard). Allotype, female, same data as holotype. Paratypes: 8 males, 5 females, same data.

This fast-flying little species was taken on bare stretches of sand in company with *Hodophylax aridus* James, and the apiocerid, *Apiocerus augur* Osten Sacken.

HETEROPOGON LOEW

TABLE OF SPECIES

1.—Scutellum and face yellow ..... *vespoides* Bigot.
Scutellum and face black in ground color ..... 2.
2.—Basal four abdominal segments wholly black in ground color ..... 3.
Third and following segments mostly reddish or with the apices broadly reddish ..... 12.
3.—Wings brown on the apical half ..... 4.
Wings never wholly brown on the apical half ..... 5.
4.—Mesonotal vittae dull blackish ..... *macerinus* Walker.
Mesonotal vittae shining ..... *phoenicurus* Loew.
5.—Wings brownish on the basal half or more ..... *ludius* Coquillett.
Wings either pure hyaline or with the cross-veins and furcations brown ..... 6.
6.—Wings wholly hyaline ..... 7.
Wings with the cross-veins clouded ..... 10.
7.—Abdomen cinereous except the genitalia ..... *wilcoxi* James.
Abdomen not wholly cinereous ..... 8.
8.—Abdomen with the segmental apices broadly cinereous pollinose .. *lautus* Loew.
Apices of the segments at most pollinose laterally ..... 9.
9.—Veins yellowish; abdominal segments whitish pollinose posteriorly *johnsoni* Back.

Veins brown; dorsum of the abdomen black-haired except at the sides. *senilis* Bigot.

10.—Legs black; mystax black below..... *nigripes* Jones.
Tibiae reddish yellow.....11.

11.—Mystax wholly white..... *paurosomus*, n. sp.
Mystax black on at least the lower half, wholly black in the male.. *currani*, n. sp.

12.—Abdominal segments black with the apices broadly reddish. *rubrifasciatus* Bromley.
Abdomen differently colored, usually mostly reddish with blackish spots laterally.....13.

13.—Wings almost uniformly smoky gray; first segment of front tarsus of male without dense white pile..... *rubidus* Coquillett.
Wings brownish, darker on the apical half; basal segment of front tarsus of male bearing dense, white pile.....14.

14.—Anterior four femora black except at apex..... *patruelis* Coquillett.
Anterior four femora yellowish below, black above..... *spatulatus*, n. sp.

This key was kindly drawn up by Dr. C. H. Curran, in whose honor I have named the following species.

Heteropogon currani, new species

Black; tibiae and tarsi reddish; head, thorax, and sides of abdomen brown and gray pollinose. Wings hyaline, the cross-veins clouded. Length, 10 to 17 mm.

MALE.—Head brown pollinose, the pollen of the posterior orbits dense, light yellowish. Antennae, palpi, and proboscis black. Pile and bristles of front, face, antennae, and palpi black. Mystax above thinly pilose, rarely with a few white hairs; bristly below. Ocellar bristles yellowish; occipito-orbital bristles usually for the most part black; rear of head densely white pilose.

Thorax brown pollinose, covered with white pile. Three broad stripes on mesonotum darker, but little differentiated; median stripe long, usually divided in front, interrupted behind; lateral stripes shorter, narrowly interrupted at the transverse suture. The area in front of the lateral stripes on each side of the median stripe is usually lighter and notably pilose. Pleurae and coxae cinereous pollinose. Mesonotal bristles long, black or yellow. Scutellum white pilose on apical half, its margin with two pairs of bristles.

Legs black, tibiae and tarsi reddish. Femora black-haired above, white pilose beneath; tarsi black-haired, the metatarsi above sparsely clothed with appressed silvery hairs. Black brush present on middle tibia, small and occasionally reduced to a few black scalelike setae.

Wings hyaline, extreme base brown as far as humeral veinlet, cross-veins and furcations clouded with brown.

Abdomen black; brown pollinose on lateral margins of 2–6, and rarely extending across the dorsum as a narrow basal line; lateral apices of 2–5 or 6 triangularly gray pollinose, often with a yellow tinge. Tergum with short black setae; lateral apices and rarely posterior margins of 2–5 yellow setiferous; lateral margins and venter white pilose, thick basally. Appendages, segments 8 and 7 often reddish brown.

FEMALE.—Similar, upper half of mystax, hairs of front, and all of occipito-orbital

bristles white or pale yellowish. Black brush on middle tibia lacking. Ovipositor shining black.

TYPES.—Holotype, male, Stillwater, Oklahoma, October 8, 1934 (A. E. Pritchard). Allotype, female, same data. Numerous paratypes, September 15–October 29, Stillwater (A. E. Pritchard).

Found abundantly on the tips of dead twigs, feeding mostly on chinch bugs. Males were seen more often with their face in the abdominal plumose hairs and anal spines of the female than in copulation. Several ovipositing females were observed on the ground under the trees. A suitable place was carefully felt out with the abdomen and the ovipositor worked into the loose loam. After laying a single egg, the ground was patted down with the tip of the abdomen and a new locality selected near by.

Heteropogon paurosomus, new species

A small unique species sharing with *currani* the black body and hyaline wings with clouded cross-veins. Length, 8 to 9 mm.

MALE.—Head covered with white pollen except vertex which is brown pollinose. Hair and bristles of head white; mystax rather dense, silky above; rear of head moderately pilose. Antennae black, brown pollinose; style short, two-thirds the length of segment 3.

Thorax light gray pollinose, the three mesonotal stripes broad and dark, brown pollinose except median stripe anteriorly. Clothing of thorax white with the pronotal, posterior mesonotal, and scutellar bristles black, or all wholly white. Scutellum in part shining black, without hairs; two pairs of bristles on the posterior margin.

Legs black, apices of femora, tibiae, and tarsi yellowish red, the tarsi brown apically. Femora white-haired above, nearly bare below. First tarsal segments thinly clothed above with appressed white hairs, the fore metatarsi with additional longer and denser white hairs externally. Spines of tibiae for the most part white, those of tarsi mostly black. Middle tibiae without black brush.

Wings hyaline, the cross-veins and furcations, especially costally, clouded with brown.

Abdomen shining black with a bluish tint, the genitalia, segment 8, and the posterior borders of apical segments reddish, or entirely black. Dorsum moderately clothed with short white hairs. Sides of segments 2–5 beset with short white spines; lateral apical corners of these segments with a patch of white pollen. Sides and venter white pilose, that of apical segments often yellow.

FEMALE.—Similar, clothing of abdominal tergum scant, and clouding of wings more extensive.

TYPES.—Holotype, male, Tuscon, Santa Catalina Mts., Arizona, August 22, 1934 (A. E. Pritchard). Allotype, female, same data as holotype. Paratypes: 1 male, 1 female, same data; 4 males, Oracle, Arizona, August 23, 1934 (A. E. Pritchard).

The Tuscon specimens were taken with *Buckellia,* occurring on the tips of dead twigs in the usual *Heteropogon* fashion.

Heteropogon spatulatus, new species

Thinly pilose; abdomen and legs largely yellowish; abdomen spatulate in male. Length, 10 to 11 mm.

MALE.—Head black, covered with whitish or pale yellow pollen and clothed with white hairs and bristles, the front, however, brown pollinose and black-haired. Mystax thinly pilose, oral margin with much longer bristles. Rear of head moderately pilose with a few scattered black hairs.

Thorax gray pollinose; three broad mesonotal stripes dark, brown pollinose, the middorsal stripe especially contrasting. Pile sparse, the dorsum nearly bare. Bristles all or for the most part white. Scutellum except pollinose base, polished blue-black, with a single pair of marginal bristles.

Legs yellowish red, anterior four femora black above, posterior femora black on apical two thirds, paler ventrally; tibiae darker apically, the posterior tibiae stout, nearly black on ventral half and apex; tarsi with apical segments dark brown; Femora thinly white-haired above, nearly bare below; tibial bristles black and white; tarsal clothing black except fore metatarsi which have appressed white hairs above, and a dense, long white brush externally. Middle tibiae with anterior side densely white-haired, a conspicuous black patch just below the middle.

Wings hyaline on basal half, brownish on apical half except an area through discal cell and third and fourth posterior cells which is clear.

Abdomen for the most part yellowish, segment 1 and a dorsal pair of extreme basal spots on 2 shining metallic blue-black; sides of 2–6 marked with black, more extensive posteriorly; dorsum of 5 and 6 and small basal spot on 7 brownish. Dorsum and sides sparsely setiferous, the setae on 1–3 and 8 yellow, on 4–7 nearly all black. Sides on 1, lower margin and apical triangle on other segments white pollinose, though small on 6–7; venter 1–4 white pollinose. Sides of 1 white pilose and bristly, abdomen otherwise with but a few long hairs on lateral margins and venter.

FEMALE.—Similar to the male, but a greasy specimen. The abdomen is not coarctate and the apical half of the wings is smoky gray rather than brownish. Front white-haired. The abdomen has a dorsal triangle on basal three-fourths of segment 2, colored similar to 1; bases of 3–5 and apical spot on 8 brown; 5–6 not darker than other segments. Spines of ovipositor black.

TYPES.—Holotype, male, Hayden, Arizona, August 20, 1934 (A. E. Pritchard). Allotype, female, Oracle, Arizona, August 23, 1934 (A. E. Pritchard).

The male was taken in the shade of the trees on the banks of the Gila River in company with *Ommatius maculatus* Banks, whose general habits it seemed to share.

BUCKELLIA CURRAN

A little known southwestern group of this genus is characterized by having the abdomen black in ground color with the first five segments

wholly pollinose. The following key will separate members of this group. *Buckellia clausa* Coquillett, which is not included although the abdomen of the female is pollinose for the most part, may be distinguished by having the tarsal segments yellow basally rather than black.

1.—Anterior calli bearing five or six bristles..... *drakei*, n. sp.
Anterior calli only pollinose.....2.
2.—Scutellum with a single pair of marginal bristles.....3.
Scutellum with more than two marginal bristles.....5.
3.—Pollen of abdomen uniformly cinereous..... *stylosa* Curran.
Pollen of abdomen brown on dorsum.....4.
4.—Dorsum of abdomen uniformly brown pollinose..... *hesperia*, n. sp.
Dorsum of abdomen brown pollinose with segmental apices broadly cinereous..... *pollinosa* Curran.
5.—Fore tibiae black..... *vera*, n. sp.
Fore tibiae reddish yellow on basal three fourths.....6.
6.—Abdomen with dorsum uniformly brown pollinose..... *lutzi* Curran.
Abdomen cinereous pollinose with dorsal brown fasciae, male, or indications of such, female..... *wilcoxi*, n. sp.

Buckellia drakei, new species

Black, cinereous and rusty-brown pollinose, the abdomen with brown fasciae; anterior tibiae in part reddish yellow. Length, 8 mm.

MALE.—Head cinereous pollinose, vertex thinly so and with a brownish tinge; face and posterior orbits silky white. Oral margin with a row of white bristles forming the small mystax, face with fine white hairs scattered nearly to the antennae.

Thorax cinereous pollinose, mesonotum with median stripe and three large spots on either side rusty brown. Dorsum with conspicuous appressed white hairs; bristles yellowish, the anterior calli bristly. Scutellum with 2 pairs of marginal bristles.

Legs black; middle tibiae brownish basally; fore tibiae with basal two thirds reddish yellow. Clothing of legs white except for black ventral bristles on tarsi.

Wings hyaline, tinged with flavescence on apical half.

Abdomen wholly pollinose, base of segment 2, basal two thirds of 3–7, and 8 brown; dorsum otherwise, lateral margins and venter cinereous. Setae on dorsum brown, on sides white; bristles of diminishing size on sides of 2–4.

HOLOTYPE.—Male, Oracle, Arizona, August 23, 1934 (C. J. Drake).

This species is named In honor of its collector, Dr. Carl J. Drake, who made possible th e collection of most of the material for this paper.

Buckellia stylosa Curran

CURRAN, 1931, Amer. Mus. Novit., No. 487, p. 7.

Black, uniformly cinereous pollinose; mesonotal vittae bare, shining black; apex of femora and tibiae except apex, reddish yellow. Known previously from a single female from Woods Co., Oklahoma. I have found this species in numbers in the panhandle near Boise City where it

was seen on tall dead weeds along the river sands, but not associated with the tip of bare twigs like other species of this group. The male is similar to the female, the abdomen wholly pollinose in this sex. The antennal style in this species is somewhat variable and is usually but a little longer than the first segment.

Buckellia pollinosa Curran

CURRAN, 1930, Amer. Mus. Novit., No. 415, p. 10.

Black, gray pollinose; abdomen with dorsum brown pollinose, the sides broadly and the broad apices of the segments gray pollinose; wings hyaline or with a brownish-yellow tinge. Known from the mountains of southern Arizona.

Buckellia hesperia, new species

Similar to *pollinosa* Curran, but the thorax more coarsely pollinose, the abdomen uniformly brown pollinose above, and the wings yellowish brown on apical half. The pale pollen has a bluish tinge. Length, 8 to 10 mm.

MALE.—Head black, covered with cinereous pollen, thin on vertex, shining white on face. Mystax a single row of oral bristles. Hairs of face sparse and very small; occipital hairs very fine; occipito-orbital bristles weak.

Thorax black, bluish-gray pollinose. Mesonotum with the median stripe, which is widened in front, abbreviated behind, and two isolated spots on each side brown, sparsely clothed with short, unnoticeable, white setae and a few white bristles posteriorly. Each posterior callus with a single long bristle, hind margin of scutellum with a pair of small bristles.

Legs black, basal three-fourths of tibiae reddish yellow; clothing white or pale yellowish.

Wings hyaline, the apical half yellowish brown although the tip is paler.

Abdomen wholly pollinose, color of dorsum uniformly brown; broad sides and venter concolorous with thoracic pleurae.

FEMALE.—Similar, dorsum of abdominal segment 7 and all of 8 shining black.

TYPES.—Holotype, male, Tuscon, Arizona, August 22, 1934 (A. E. Pritchard). Allotype, female, same data as holotype. Paratypes: one male and one female, same data.

Buckellia lutzi Curran

CURRAN, 1931, Amer. Mus. Novit., No. 487, p. 7.

Black, covered with cinereous pollen, mesonotal vittae and dorsum of abdomen brown; scutellum bearing six marginal bristles; tibiae reddish yellow on basal three-fourths. Described from a single male, Regnier, Colorado (extreme end of Oklahoma panhandle), and recorded from Texas by Bromley.

Buckellia vera, new species

Very similar to *lutzi* Curran, differing mainly by the legs being nearly all black. The hind margin of the scutellum has typically two pairs of bristles instead of three, although one specimen has an imperfectly formed third pair. Length, 8 mm.

FEMALE.—Head cinereous white pollinose, front and vertex tinged with brown. Mystax a single row of white bristles; fine hair sparsely scattered over face. Antennae black, thinly gray and brown pollinose; style strongly tapering and yellow on apical half.

Thorax gray pollinose, mesonotal vittae brown; median stripe widened in front, abbreviated behind; lateral stripes short, divided at the transverse suture.

Legs black with base of middle tibiae and basal half of hind tibiae dark reddish brown.

Wings hyaline with the apical half tinged with yellow. Halteres yellowish.

Abdomen cinereous pollinose with the upper surface uniformly brown except dorsum of segment 7 and all of 8 which is bare and shining black.

TYPES.—Holotype, female, Tuscon, Arizona, August 22, 1934 (A. E. Pritchard). Paratype, female, same data.

Buckellia wilcoxi, new species

Similar to *lutzi* Curran, but the apices or most of the dorsum of the abdominal segments grayish like the sides and venter. The antennae are slenderer than in either *lutzi* or *vera*. Length, 8 mm.

MALE.—Head cinereous pollinose, thinner on vertex; mystax composed of several mixed rows of long bristles and hairs; hairs on face longer than usual. Antennae black, brown and white pollinose; style with apical half yellowish.

Thorax grayish pollinose, brownish on dorsum. Three mesonotal stripes with pollen worn off, but not the short white hairs; vittae thus formed dull black and not shining as in *stylosa*. Scutellum grayish ochreous with three pairs of marginal bristles.

Legs black, basal two-thirds of hind tibiae and basal three-fourths of other tibiae reddish yellow.

Wings hyaline with a light flavescent tinge.

Abdomen with dorsum brown pollinose, segment 2, broad apices of following segments, sides, and venter gray. Short white setae are quite noticeable over tergum.

FEMALE.—Similar to the male, but with only light brown basal markings on the abdominal segments; pollen nearly worn off dorsum of 6; dorsum of 7 and all of 8 shining black.

TYPES.—Holotype, male, June 24, 1934, Kenton, Oklahoma (A. E. Pritchard). Allotype, female, same locality, June 21, 1934.

This species is named in honor of Mr. Joseph Wilcox from whom I have received much material used in these studies.

Ommatius parvulus Schaeffer

SCHAEFFER, 1916, Jour. New York Ent. Soc., XXIV, p. 69.

I took several females of this species in the Huachuca Mountains,

Arizona (type locality). In Curran's key to *Ommatius* (Amer. Mus. Novit., No. 327, 1928), *parvulus* will run to *tibialis* from which species it is immediately separable by the black femora.

Ommatius bromleyi, new species

Black and yellowish in ground color, ochreous and brown pollinose; legs largely yellowish. Length, 11 to 12.5 mm.

FEMALE.—Head black, white pollinose, front and vertex with an ochreous tinge; bristles and hairs white, a pair of long bristles on mystax above and the ocellar bristles black; occipital cilia sometimes black. Antennae black, the basal segments yellowish or reddish; third segment one and one-half times as long as broad.

Thorax black in ground color, the calli, base of scutellum, pleurae broadly, and coxae reddish; covered with ochreous pollen; mesonotal vittae brown, somewhat rubbed off. Usual four bristles on sides of posterior half of mesonotum black; dorsocentrals present only as several small posterior setae; mesonotal hairs lacking. Scutellum sparsely covered with small fine hairs; scutellars absent.

Legs yellowish; dorsal apex of middle femora, apical two-fifths of hind femora especially dorsally, apex of hind tibiae, and tarsi except most of basal segment, dark brown. Middle femora with an anteroventral oblique row of 4 or 5 strong black bristles, and a row of weak white posteroventral bristles and hairs. Posterior femora with a row of 6–8 black anteroventral bristles, and a posterior row of 5 similar bristles, a long white bristle present between the two basal bristles of the latter row.

Wings hyaline, the apex grayish.

Abdomen black with most of segment 1, venter, dorsal spots, and segment 8 reddish; thinly grayish pollinose, a large spot on each segment covering most of its dorsum, brown pollinose. Hair short, yellowish, brown on dorsum of subapical two or three segments. Segment 8 and genital valves shining reddish. Abdomen not at all spatulate, only very slightly narrowed near base.

TYPES.—Holotype, female, San Carlos, Arizona, August 19, 1934 (A. E. Pritchard). Paratype, female, same data. Taken in the shade of trees along a spring-fed stream in an Arizona desert.

This species is named in honor of Mr. S. W. Bromley, who has been of much assistance in my work on Asilidae.

O. bromleyi is related to *spatulatus* Curran (Brazil) but is readily distinguished by the nearly yellow legs and non-spatulate abdomen of the female. A weak pteropleural bristle is apparent on one side of one of the specimens and, if considered as having such, will run to couplet 14 of Curran's key where it disagrees with both alternatives by having the tarsi yellowish basally and otherwise dark brown.

MALLOPHORINA CURRAN

Two Arizona species that I have of this genus are closely related to *guildiana* Williston, but certainly distinct from that species. The condition of the first posterior cell being open or closed affords an easy

means for the separation of these and the allied species, *acra* Curran, and a unique new species from New Mexico. *M. guildiana* may rarely be an exception to this, since Williston describes it as having this cell closed or nearly so.

In Oklahoma, *acra* occurs commonly over the state except the western part of the panhandle; *guildiana* is found only at the extreme end of the panhandle. On this basis, I would not expect the true *guildiana* to be found in North Carolina as Williston's description indicates.

TABLE OF SPECIES

1.—Femora black basally.....2.
Femora broadly reddish basally.....3.
2.—Posterior tibiae black-haired dorsally on whole length..*laphroides* Wiedemann.
Posterior tibiae yellow-haired on basal half.....*clausicella* Macquart.
3.—First posterior cell closed and petiolate.....4.
First posterior cell wide open.....6.
4.—Posterior femora with long black hairs below.....*acra* Curran.
Posterior femora with pile wholly yellow.....5.
5.—Tarsi black; middle tarsi of female black-haired.....*prudens*, n. sp.
Tarsi reddish yellow; middle tarsi of female yellow-haired..*guildiana* Williston.
6.—Mesonotal bristles mostly black; male genitalia reddish yellow, yellow-haired.....*frustra*, n. sp.
Mesonotal bristles and hairs whitish; male genitalia black, densely silvery haired above.....*pulchra*, n. sp.

Mallophorina prudens, new species

Smaller than *guildiana*, lighter and less pilose; tibiae of male and tarsi of female much more extensively black-haired. The wings are considerably lighter than in that species. Length, 8 to 11 mm.

MALE.—Head cinereous pollinose, thinner on front and vertex; bristles and pile white, yellowish on vertex, sometimes partly black on front. Mystax rather dense, the lower oral corners with black hairs; palpi with black and white hairs. Antennae black, basal segments and style reddish brown; style slightly shorter than third segment.

Thorax cinereous pollinose with an ochreous tinge; mesonotum with a darker geminate median stripe and a short, divided median stripe on each side. Pile whitish, yellowish and short on the mesonotum where the bristles and sometimes the hairs on the posterior half are in part black.

Legs reddish yellow; front femora usually with a dorsal black stripe on apical half; middle femora black above except at base; hind femora black on apical two-thirds; apex of hind tibiae and all the tarsi black. Pale hairs for the most part white; black hairs on venter and dorsal half of front tibiae, venter, and most of dorsum of middle tibiae, apical half and sometimes venter of hind tibiae.

Wings nearly hyaline, lightly washed with brown. First posterior cell long petiolate apically.

Abdomen black, gray pollinose on narrow posterior margins of the segments,

broadly on sides and venter; black of dorsum sharply differentiated. Pile white on first segment and apex, otherwise dull yellow.

FEMALE.—Similar, mystax and palpal hairs all white; anterior four tibiae pale-haired or with a few black hairs at dorsal apex of middle pair, hind tibiae with apical third black-haired; front tarsi with hairs mostly pale.

TYPES.—Holotype, male, Oracle, Arizona, April 23, 1934 (A. E. Pritchard). Allotype female, Whiteriver, Arizona, August 18, 1934 (A. E. Pritchard). Paratypes: one male, two females, Oracle, and one male, Whiteriver, same data respectively.

Mallophorina frustra, new species

Differs from *guildiana* and *prudens* by having the first posterior cell open, the wings considerably darker, and the lower part of the mystax black in the male. Length 9.5 to 11.5 mm.

MALE.—Head gray pollinose, ochreous on vertex; pile and bristles white, yellow on vertex and black on front, lower part of mystax, and palpi. Hairs of mystax fine, not very thick. Antennae black, black-haired on basal two segments; style two-thirds to three-fourths as long as third segment.

Thorax cinereous brown pollinose, darker on dorsum; yellowish pilose. Mesonotum with bristles black and with black hairs posteriorly.

Femora reddish yellow, black above, the hind pair black except narrowly on base and venter; yellowish pilose, usually with long black hairs below on posterior femora. Tibiae yellowish, reddish yellow apically. Anterior tibiae when viewed from in front with long white hair externally, and shorter yellow hair on inner half, black on apical fourth or less; a few long black back hairs usually present in front and behind. Other tibiae yellow-haired; middle tibiae with black hairs at apex in front, and usually with a few black hairs along dorsum and venter; hind tibiae with apical third to two fifths black-haired, usually with ventral black hairs and several black dorsal bristles in the yellow of basal part. Tarsi reddish brown, black-haired.

Wings rather dark brown, especially along the costa. First posterior cell apically narrowed, but open.

Abdomen black on dorsum; narrow posterior border of each segment, broad sides, and venter cinereous brown pollinose. Pile yellow, paler on first segment. Genitalia reddish yellow.

FEMALE.—Similar, the pile generally paler; mystax, and usually palpal hairs pale; femora and tibiae with clothing nearly all pale; hairs of front tibiae not differentiated in male; black hairs of hind tibiae restricted to apical fourth; pale hairs on front, middle, and sometimes posterior tarsi.

TYPES.—Holotype, male, Tem (south of Whiteriver), Arizona, August 19, 1934 (A. E. Pritchard). Allotype, female, same data. Paratypes: two males, two females, August 18, Whiteriver, Arizona (A. E. Pritchard).

Mallophorina pulchra, new species

Distinguished from all other species in the genus by the dense appressed white hairs on the male genitalia. Length 10 to 11 mm.

MALE.—Head cinereous pollinose; hairs and bristles white or pale yellow, only the second antennae segment with black hairs. Mystax long and dense, extending to the antennae and completely concealing the face when viewed from in front. Antennae black; arista as long as third segment. Eyes green in life.

Thorax gray pollinose, dorsum darker; covered with white or pale yellow pile; mesonotal bristles white or pale yellowish.

Legs orange-yellow, the coxae, trochanters, apical third of middle femora, apical half of hind femora, broad apex of hind tibiae, and tarsi all black. Femora bright yellow pilose, outer apex of posterior pair black-haired; usual spinelike bristles on middle and hind femora black. Tibiae with long yellow pile, the posterior pair black-haired on apical half with a dorsal row of black bristles and a few black hairs. Anterior tarsi with yellowish hairs, tarsal clothing otherwise black.

Wings clear brown, somewhat darker along costa. First posterior cell widely open at margin, and but slightly narrowed.

Abdomen cinereous pollinose with a dorsal rounded, non-pollinose spot over basal two-thirds of each segment; posterior margin of each dull black fascia thus formed narrowly margined with brown pollen. A midventral stripe is similarly dull black. Pile whitish on first segment, otherwise yellow, especially bright on the sides. Genitalia black, bearing dense, appressed white pile above.

FEMALE.—Similar, the pile of the body and legs white; hind femora without black hairs at apex; hind tibiae with black hairs, or not, over the apical third. Ovipostor black, genital valves dark brown.

TYPES.—Holotype, male, August 29, 1934, Carlsbad, New Mexico (A. E. Pritchard). Allotype female, and four paratype males, same data.

Promachus oklahomensis, new species

Closely allied to *fitchii* Osten Sacken, but lighter, the body nearly grayish and wings nearly hyaline; gray shadow in the first submarginal cell distinctly narrower than the marginal cell. The male genitalia lacks the median projection near the upper inner edge of the outer forceps at the middle which is present in *fitchii*. Length, 21 to 29 mm.

MALE.—Head black, density yellowish-gray pollinose; clothed with light yellowish bristles and hairs; occipital cilia sometimes partly black. Antennae black, first segment in part reddish; style dark reddish, about as long as antennae. Palpi dark reddish brown, bristly. Eyes emerald green in life.

Thorax yellowish-gray pollinose, the mesonotum with a darker geminate median stripe wide in front, and a wide stripe on each side. Hairs and bristles whitish or pale yellowish, a few of the pronotal bristles rarely, short setae over the mesonotum, mesonotal bristles for the most part, and several of the scutellar bristles black.

Legs black, the femora behind, tibiae, and tarsi reddish; clothed with recumbent whitish hairs and black and whitish bristles.

Wings nearly hyaline, lightly washed with brown. Shadow in the first submarginal cell narrower than the marginal cell.

Abdomen gray pollinose with a middorsal row of dark spots, covered with whitish hairs; segment 8 with black hairs. Genitalia reddish, nearly black dorsally, as long as segments 5, 6, and 7 combined; pale-haired, with dense, silvery appressed hairs above, the dorsolateral corners black-haired on apical half.

FEMALE.—Similar, ovipositor black.

TYPES.—Holotype, male, Kenton, Oklahoma, June 26, 1933 (A. E. Pritchard). Allotype female, same data. Paratypes: 33 males, 26 females, same locality, June 22–29, 1933; one male, Granite, Okla., July 9, 1934 (A. E. Pritchard).

This species is a western equivalent to *fitchii*. It was found commonly in an open gully filled with cat-tails, flying with a high-pitched buzz, and preying voraciously. Prey included acridids, winged ants, a bombyliid, a small cicada, and a scarab.

Proctacanthella jamesi, new species

Easily recognized from other members of the genus by a middorsal row of contrasting dark spots on the abdomen. Male genitalia with a posteriorly directed fan of long bristles on either side of the ninth sternite. Length, 19 mm.

MALE.—Head black, densely white pollinose, the vertex broadly ochreous; hairs and bristles white, pale yellow on vertex. Mystax dense, with longer bristles below; front with a dense patch of hairs on either side. Antennae black, tip of basal segment and second segment reddish; third segment as long as first two together, style slightly shorter than third segment, hairs on basal segments mostly white.

Thorax black in ground color, the anterior calli and pleurae posteriorly reddish. Covered with yellowish-gray pollen with three brown stripes over the mesonotum, the middorsal stripe bisected, wide and contrasting. Vestiture white, a few of the mesonotal setae black.

Legs reddish, black above on anterior four femora, and in front on hind femora, also with a black anterior streak on middle tibiae; covered with recumbent white hairs; bristles white except the short ones on the venter of the tarsi which are brown or black. Claws black, reddish basally.

Wings hyaline, veins brown. Halteres yellowish red.

Abdomen reddish in ground color on the broad apices of the segments, venter and posterior segments; covered with light gray pollen, tinged with ochreous; a middorsal dark brown spot on each segment except 7 and 8. Clothing white, the setae on the brown spots brown. Genitalia reddish, thinly pollinose and white pilose; a fan of bristles on a tubercle on each side of the ninth sternite is posteriorly directed and curved upward; ninth sternite truncately produced at apex.

FEMALE.—Similar, the middorsal, abdominal spots narrower.

TYPES.—Holotype, male, Kenton, Oklahoma, June 22, 1933 (A. E. Pritchard). Allotype female and one paratype male, same data. Paratype, male, Trinidad, Colorado, June 7, 1932 (C. R. Jones), in the collection at Colorado Agricultural College, Fort Collins.

Named in honor of Mr. M. T. James, to whom I am grateful for assistance and encouragement in my work with this group.